

What is claimed is:

1. A method for detecting an object from its background or surroundings comprising the steps of:

viewing an area with a viewing device, while selectively and varyingly changing a sensitivity of the viewing device to certain wavelengths of light (electromagnetic radiation) lying in any one of the ultraviolet (UV) range, the visible range, the near infrared range or the far infrared range; and

determining the presence of an object when a visual difference between the object and background is discerned when the sensitivity of the viewing device is changed to a certain mixture of wavelengths of light.

2. The method of claim 1, wherein said determining includes determining the presence of an object when a visual difference is observed between the object and the background and when no discernable visual difference is observed when the sensitivity of the viewing device is changed to at least another mixture of wavelengths of light.

3. The method of claim 1, wherein said viewing an area includes viewing the area with the viewing device in the visual light spectrum and while selectively varyingly changing the sensitivity of the viewing device to certain wavelengths of light lying in one of the UV range, the near IR range or the far IR range; and

determining the presence of an object when a visual difference between the object and background is discerned when the sensitivity of the viewing device is

changed to a certain mixture of wavelengths of light in the visual range and the one of the UV range, the near IR range or the far IR range.

4. The method of claim 3, wherein said determining includes determining the presence of an object when a visual difference is observed between the object and the background and when no discernable visual difference is observed when the sensitivity of the viewing device is changed to at least another mixture of wavelengths of light.

5. The method of claim 3, further comprising the step of:  
dividing at least a portion of the one of the UV range, the near IR range or the far IR range into one or more viewing bandpasses, each bandpass having a predetermined bandwidth;

wherein said selectively and variably changing includes viewing the area in the visual light spectrum and in each of the one or more viewing bandpasses; and

wherein said determining includes determining the presence of an object when a visual difference between the object and the background is seen when viewing the area in visual light spectrum and any one of the one or more viewing bandpasses.

6. The method of claim 5, wherein said determining includes determining the presence of an object when a visual difference is observed between the object and the background and when no discernable visual difference is observed when viewing

the area in visual light spectrum and in at least another of the one or more viewing bandpasses.

7. The method of any of claims 5-6 wherein said dividing includes dividing at least a portion of the one of the UV range, the near IR range or the far IR range into a plurality or more viewing bandpasses.

8. The method of any of claims 5-6 wherein said dividing includes dividing the spectral range of the one of the UV range, the near IR range or the far IR range into one or more viewing bandpasses.

9. The method of any of claims 5-6 wherein said dividing includes setting the bandwidth so each viewing bandpass has a width that is narrow enough so as to minimize contributions from other areas of the spectral region that would tend to mask the visual difference between the object and the background and wide enough to pass enough light/energy so as to make a difference in a display of a viewing device.

10. The method of any of claims 5-6, wherein said dividing includes arranging the viewing bandpasses and setting the bandwidth of adjacent viewing bandpasses of the one or more viewing bandpasses such that the adjacent viewing bandpasses partially overlap.

11. An apparatus for detecting an object from its background or surroundings comprising:

an electro-optical viewing device including being capable of detecting light in one of the ultraviolet (UV) range, the visible range, the near infrared or the far infrared; and

a mechanism, disposed between the object and the electro-optical viewing device, configured and arranged to selectively and varyingly change the optical input to the electro-optical viewing device lying in one of the ultraviolet (UV) range, the visible range, the near infrared or the far infrared.

12. The apparatus of claim 11, wherein the mechanism includes:

a plurality of filters, the filters being configured and arranged so each view a different bandwidth of the one of the ultraviolet (UV) range, the visible range, the near infrared or the far infrared; and

a mechanism for selectively positioned each filter at a light input end of the electro-optical viewing device.

13. The apparatus of claim 11, wherein the mechanism includes:

a filter comprised of a plurality of filter segments, the filter segments being configured and arranged so each view a different bandwidth of the one of the ultraviolet (UV) range, the visible range, the near infrared or the far infrared; and

a mechanism for one of selectively rotating, shifting or tilting the filter so as to successively position each filter segment at a light input end of the electro-optical viewing device.

14. The apparatus of any of claims 11-13, wherein the electro-optical viewing device is one of a monochromatic image viewing device or a color image viewing device.

15. The apparatus of any of claims 11-13 wherein the electro-optical viewing device is a color image viewing device and the an amount of light in each of the viewing bandpasses is successively and separately added into the image forming sensitivity of the color image viewing device.